

Patent  
Attorney's Docket No. 032396-043

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of	)	
WRIGHT et al.	)	<b>NON-FEE AMENDMENT</b>
Application No.: 09/296,264	)	Group Art Unit: 1635
Filed: April 22, 1999	)	Examiner: M. Schmidt
For: NEUROFILIN ANTISENSE	)	
OLIGONUCLEOTIDE SEQUENCES	)	
AND METHODS OF USE SAME TO	)	
MODULATE CELL GROWTH	)	

**REPLY TRANSMITTAL LETTER**

**RECEIVED**

**AUG 17 1999**

**TECH CENTER 1600/2900**

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

Enclosed is a reply to the Office Action mailed on August 6, 1999 for the above-identified patent application.

- [X] Also enclosed are copies of the Transmittal Letter for Missing Parts of Application, Notice to Comply with Requirements for Patent Applications Containing Nucleotide Sequence and/or Amino Acid Sequence Disclosures, Reply and Preliminary Amendment, paper copy of the Sequence Listing and a date stamped returned postcard
- [X] Also enclosed is a copy of the Notice to Comply with Requirements for Patent Applications Containing Nucleotide Sequence and/or Amino Acid Sequence Disclosures mailed on August 6, 1999.
- [X] A statement claiming small entity status was submitted previously.
- [X] No additional claim fee is required.

The Commissioner is hereby authorized to charge any appropriate fees under 37 C.F.R. §§ 1.16, 1.17 and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800. This paper is submitted in triplicate.

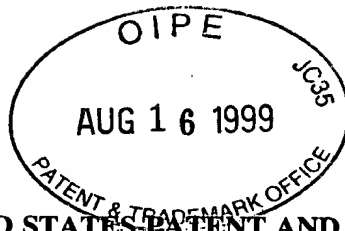
Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

By: Leslie Mooi  
Leslie A. Mooi  
Registration No. 37,047

P.O. Box 1404  
Alexandria, Virginia 22313-1404  
(650) 854-7400

Date: August 13, 1999



**COPY**

Patent  
Attorney's Docket No. 032396-043

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of )  
 )  
WRIGHT et al. )  
 )  
Application No.: 09/296,264 ) Group Art Unit: 1643  
 )  
Filed: April 22, 1999 ) Examiner: Unassigned  
 )  
For: NEUROPILIN ANTISENSE )  
 )  
OLIGONUCLEOTIDE SEQUENCES AND )  
 )  
METHODS OF USING SAME TO )  
 )  
MODULATE CELL GROWTH )

**TRANSMITTAL LETTER FOR MISSING PARTS OF APPLICATION**

**BOX: MISSING PART**

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

In complete response to the Notice to File Missing Parts of Application Under 37 C.F.R.  
§ 1.53(e) dated May 13, 1999, enclosed please find:

- ☒ a Combined Declaration and Power of Attorney signed by the inventor(s) and the surcharge of ☒ \$65.00 ☐ \$130.00 as set forth in 37 C.F.R. § 1.16(e);
- ☐ Note that the inventor(s) identified on the currently filed Combined Declaration and Power of Attorney are different than listed on the application filing papers.
- ☒ a Declaration Claiming Small Entity Status;
- ☐ a Petition for Extension of Time;
- ☒ a Reply and Preliminary Amendment;
- ☐ an Assignment document and the \$40.00 Assignment Recording Fee;
- ☒ other a copy of the Notice to File Missing Parts of Application;
- ☒ other a copy of the Notice to Comply with Requirements for Patent Application Containing Nucleotide Sequence and/or Amino Acid Sequence Disclosures;
- ☒ other a paper copy and a computer readable copy of the Sequence Listing;
- ☒ a check in the amount of \$ 562.00 (\$65.00 for the surcharge fee and \$497.00 for the filing fee due); and
- ☐ charge \$\_\_\_\_\_ to Deposit Account No.02-4800 for the fee due.

**COPY**

Transmittal Letter for Missing Parts of Application

Application No. 09/296,264

Attorney's Docket No. 032396-043

Page 2

[ ] charge \$\_\_\_\_\_ to Deposit Account No. 02-4800 for the fee due.

The Commissioner is hereby authorized to charge any appropriate fees under 37 C.F.R. §§ 1.16, 1.17 and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800. This paper is submitted in triplicate.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

P.O. Box 1404  
Alexandria, Virginia 22313-1404  
(650) 854-7400

By: Leslie Mooi  
Leslie A. Mooi  
Registration No. 37,047

Date: July 6, 1999

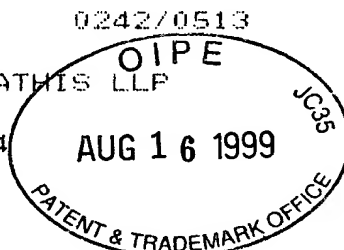


UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARK  
Washington, D.C. 20231

**COPY**

APPLICATION NUMBER	FILING/RECEIPT DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO./TITLE
09/296,264	04/22/99	WRIGHT	J 032396-043

GERALD F SWISS ESO  
BURNS DOANE SWECKER & MATHIS LLP  
P O BOX 1404  
ALEXANDRIA VA 22313-1404



NOT ASSIGNED

1643

DATE MAILED: 05/13/99

**NOTICE TO COMPLY WITH REQUIREMENTS FOR PATENT APPLICATIONS  
CONTAINING NUCLEOTIDE SEQUENCE AND/OR AMINO ACID SEQUENCE DISCLOSURES**

The nucleotide and/or amino acid sequence disclosure contained in this application does not comply with the requirements for such a disclosure as set forth in 37 CFR 1.821 - 1.825 for the following reason(s):

- ☐ 1. This application fails to comply with the requirements of 37 CFR 1.821 - 1.825.
- ☐ 2. This application does not contain, as a separate part of the disclosure on paper copy, a "Sequence Listing" as required by 37 CFR 1.821(c).
- ☒ 3. A copy of the "Sequence Listing" in computer readable form has not been submitted as required by 37 CFR 1.821(e).
- ☐ 4. A copy of the "Sequence Listing" in computer readable form has been submitted. The content of the computer readable form, however, does not comply with the requirements of 37 CFR 1.822 and/or 1.832, as indicated on the attached marked-up copy of the "Raw Sequence Listing."
- ☐ 5. The computer readable form that has been filed with this application has been found to be damaged and/or unreadable as indicated on the attached CRF Diskette Problem Report. A substitute computer readable form must be submitted as required by 37 CFR 1.825(d).
- ☐ 6. The paper copy of the "Sequence Listing" is not the same as the computer readable form of the "Sequence Listing" as required by 37 CFR 1.821(e).
- ☐ 7. OTHER: TECH CENTER 1600/2900

**RECEIVED**

**AUG 17 1999**

**APPLICANT MUST PROVIDE:**

- ☐ An initial or substitute computer readable form (CRF) copy of the "Sequence Listing."
- ☐ An initial or substitute paper copy of the "Sequence Listing," as well as an amendment directing its entry into the specification.
- ☐ A statement that the content of the paper and computer readable copies are the same and, where applicable, include no new matter, as required by 37 CFR 1.821(e), 1.821(f), 1.821(g), 1.825(b) or 1.825(d).

**FOR QUESTIONS REGARDING COMPLIANCE WITH THESE REQUIREMENTS, PLEASE CONTACT:**

- ☐ For Rules Interpretation, call (703) 308-1123.
- ☐ For CRF submission help, call (703) 308-4212.
- ☐ For PatentIn software help, call (703) 308-6856.

Customer Service Center  
Initial Patent Examination Division (703) 308-1202

**PART 2 - COPY TO BE RETURNED WITH RESPONSE**

*Handwritten notes:*  
032396-043  
GenSense Technology  
EFS/LAM/LJB  
5/14/99  
Sequence Listing Disc  
6/13/99



**UNITED STATES DEPARTMENT OF COMMERCE**  
**Patent and Trademark Office**  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

APPLICATION NUMBER	FILING/RECEIPT DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO./TITLE
09/296,264	04/22/99	WRIGHT	J 032396-043

GERALD F SWISS ESQ  
BURNS DOANE SWECKER & MATHIS LLP  
P O BOX 1404  
ALEXANDRIA VA 22313-1404



NOT ASSIGNED

1643

DATE MAILED:

05/13/99

**NOTICE TO FILE MISSING PARTS OF APPLICATION**  
**Filing Date Granted**

An Application Number and Filing Date have been assigned to this application. The items indicated below, however, are missing. Applicant is given **TWO MONTHS FROM THE DATE OF THIS NOTICE** within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a). If any of items 1 or 3 through 5 are indicated as missing, the **SURCHARGE** set forth in 37 CFR 1.16(e) of ☐ \$65.00 for a small entity in compliance with 37 CFR 1.27, or ☐ \$130.00 for a non-small entity, must also be timely submitted in reply to this **NOTICE** to avoid abandonment.

If all required items on this form are filed within the period set above, the total amount owed by applicant as a ☐ small entity (statement filed) ☒ non-small entity is \$ 1124.00.

☒ 1. The statutory basic filing fee is:

- ☒ missing.  
☐ insufficient.

Applicant must submit \$ 760.00 to complete the basic filing fee and/or file a small entity statement claiming such status (37 CFR 1.27).

☒ 2. The following additional claims fees are due:

\$ \_\_\_\_\_ for \_\_\_\_\_ total claims over 20.  
\$ 234.00 for 3 independent claims over 3.  
\$ \_\_\_\_\_ for multiple dependent claim surcharge.

Applicant must either submit the additional claim fees or cancel additional claims for which fees are due.

☒ 3. The oath or declaration:

- ☒ is missing or unsigned.  
☐ does not cover the newly submitted items.

An oath or declaration in compliance with 37 CFR 1.63, including residence information and identifying the application by the above Application Number and Filing Date is required.

☐ 4. The signature(s) to the oath or declaration is/are by a person other than inventor or person qualified under 37 CFR 1.42, 1.43 or 1.47.

A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.

☐ 5. The signature of the following joint inventor(s) is missing from the oath or declaration:

An oath or declaration in compliance with 37 CFR 1.63 listing the names of all inventors and signed by the omitted inventor(s), identifying this application by the above Application Number and Filing Date, is required.

☐ 6. A \$50.00 processing fee is required since your check was returned without payment (37 CFR 1.21(m)).

☐ 7. Your filing receipt was mailed in error because your check was returned without payment.

☐ 8. The application was filed in a language other than English.

Applicant must file a verified English translation of the application, the \$130.00 set forth in 37 CFR 1.17(k), unless previously submitted, and a statement that the translation is accurate (37 CFR 1.52(d)).

☒ 9. OTHER:

Direct the reply and any questions about this notice to "Attention: Box Missing Parts."

A copy of this notice **MUST** be returned with the reply.

Customer Service Center  
Initial Patent Examination Division (703) 308-1202



**UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

09/296,264 04/22/99 WRIGHT J 032396-043

HM22/0806  
GERALD F. SWISS ESQ  
BURNS DOANE SWECKER & MATHIS LLP  
P O BOX 1404  
ALEXANDRIA VA 22313-1404

EXAMINER

SCHMIDT, M

ART UNIT

PAPER NUMBER

1635

DATE MAILED:

08/06/99



**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

**RECEIVED**  
**AUG 17 1999**  
**TECH CENTER 1600/2900**



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office

ADDRESS:  
ASSISTANT COMMISSIONER FOR PATENTS  
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTY. DOCKET NO.
-----------------	-------------	----------------------	------------------



EXAMINER
----------

ART UNIT	PAPER NUMBER
----------	--------------

4

DATE MAILED:

Please find below and/or attached an Office communication concerning the above identified application.

Commissioner of Patents and Trademarks

This application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 CFR 1.821(a)(1) and (a)(2). However, this application fails to comply with the requirements of 37 CFR 1.821 through 1.825 for the reason(s) set forth on the attached Notice To Comply With Requirements For Patent Applications Containing Nucleotide Sequence And/Or Amino Acid Sequence Disclosures.

Applicant is given ONE MONTH, or THIRTY DAYS, whichever is longer, from the mailing date of this letter within which to comply with the sequence rules, 37 CFR 1.821 - 1.825. Failure to comply with these requirements will result in ABANDONMENT of the application under 37 CFR 1.821(g). Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a). In no case may an applicant extend the period for reply beyond the SIX MONTH statutory period. Direct the reply to the undersigned. Applicant is requested to return a copy of the attached Notice to Comply with the reply.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to *Mary M. Schmidt*, whose telephone number is (703) 308-4471. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, *George Elliott, Ph.D.* may be reached at (703) 308-4003. The examiner's primary, *John LeGuyader*, may be reached at (703) 308-0447. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0196.

JOHN L. LEGUYADER  
PRIMARY EXAMINER  
GROUP 1800  
600



**NOTICE TO COMPLY WITH REQUIREMENTS FOR PATENT APPLICATIONS CONTAINING NUCLEOTIDE SEQUENCE AND/OR AMINO ACID SEQUENCE DISCLOSURES**

The nucleotide and/or amino acid sequence disclosure contained in this application does not comply with the requirements for such a disclosure as set forth in 37 C.F.R. 1.821 - 1.825 for the following reason(s):

- ☒ 1. This application clearly fails to comply with the requirements of 37 C.F.R. 1.821-1.825. Applicant's attention is directed to these regulations, published at 1114 OG 29, May 15, 1990 and at 55 FR 18230, May 1, 1990.
- ☐ 2. This application does not contain, as a separate part of the disclosure on paper copy, a "Sequence Listing" as required by 37 C.F.R. 1.821(c).
- ☐ 3. A copy of the "Sequence Listing" in computer readable form has not been submitted as required by 37 C.F.R. 1.821(e).
- ☐ 4. A copy of the "Sequence Listing" in computer readable form has been submitted. However, the content of the computer readable form does not comply with the requirements of 37 C.F.R. 1.822 and/or 1.823, as indicated on the attached copy of the marked -up "Raw Sequence Listing."
- ☐ 5. The computer readable form that has been filed with this application has been found to be damaged and/or unreadable as indicated on the attached CRF Diskette Problem Report. A Substitute computer readable form must be submitted as required by 37 C.F.R. 1.825(d).
- ☐ 6. The paper copy of the "Sequence Listing" is not the same as the computer readable form of the "Sequence Listing" as required by 37 C.F.R. 1.821(e).
- ☐ 7. Other: \_\_\_\_\_

**Applicant Must Provide:**

- ☒ An initial or substitute computer readable form (CRF) copy of the "Sequence Listing".
- ☒ An initial or substitute paper copy of the "Sequence Listing", as well as an amendment directing its entry into the specification.
- ☒ A statement that the content of the paper and computer readable copies are the same and, where applicable, include no new matter, as required by 37 C.F.R. 1.821(e) or 1.821(f) or 1.821(g) or 1.825(b) or 1.825(d).

For questions regarding compliance to these requirements, please contact:

For Rules Interpretation, call (703) 308-4216

For CRF Submission Help, call (703) 308-4212

PatentIn Software Program Support (SIRA)

Technical Assistance.....703-287-0200

To Purchase PatentIn Software.....703-306-2600

**PLEASE RETURN A COPY OF THIS NOTICE WITH YOUR RESPONSE**

Copy

**COPY**

Patent

Attorney's Docket No. 032396-043

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of

WRIGHT et al.

Application No.: 09/296,264

Filed: April 22, 1999

For: NEUROPILIN ANTISENSE  
OLIGONUCLEOTIDE SEQUENCES AND  
METHODS OF USING SAME TO  
MODULATE CELL GROWTH



Group Art Unit: 1643

Examiner: Unassigned

**REPLY AND PRELIMINARY AMENDMENT**

**BOX: MISSING PART**

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

This is in complete reply to the notice to comply with requirements for patent applications containing nucleotide sequence and/or amino acid sequence disclosures dated May 13, 1999. Entry of the following amendments is respectfully requested.

**In the Specification**

Please insert the paper copy of the Sequence Listing at the end of the application.

**REMARKS**

It is respectfully requested that the above amendment be entered and that this application be considered in view of the above amendment.

**RECEIVED**

**AUG 17 1999**

**TECH CENTER 1600/2900**

1. **Amendment**

Applicants enclose herewith a paper copy of the Sequence Listing and have amended the specification to insert the paper copy of the Sequence Listing into the application.

**COPY**

Transmittal Letter for Missing Parts of Application

Application No. 09/296,264

Attorney's Docket No. 032396-043

Page 2

2. Statement

The undersigned hereby states that:

1. the content of the paper and computer readable copies of the Sequence Listing, submitted in accordance with 37 C.F.R. §§1.821(c) and (e) respectively, are the same;
2. the submission filed in accordance with 37 C.F.R §1.821(g) does not include new matter.

Early and favorable consideration on the merits is respectfully requested.

Respectfully submitted,

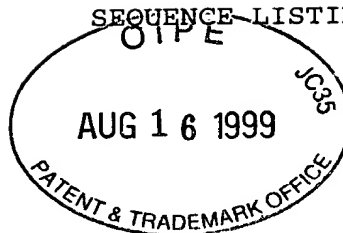
By: Leslie Mooi  
Leslie A Mooi  
Registration No. 37,047

P.O. Box 1404  
Alexandria, Virginia 22313-1404  
(650)854-7400

Date: July 6, 1999

copy  
**COPY**

SEQUENCE LISTING



<110> WRIGHT, Jim A.  
YOUNG, Aiping H.  
LEE, Yoon S.

<120> NEUROFILIN ANTISENSE OLIGONUCLEOTIDE SEQUENCES AND  
METHODS OF USING SAME TO MODULATE CELL GROWTH

<130> 032396-043

<140> 09/296,264

<141> 1999-04-22

<150> US 60/082,791

<151> 1998-04-23

<160> 35

<170> PatentIn Ver. 2.0

<210> 1

<211> 20

<212> DNA

<213> Human

<400> 1

gagcggcagc cccctctcca

<210> 2

<211> 20

<212> DNA

<213> Human

**RECEIVED**

**AUG 17 1999**

**TECH CENTER 1600/2900**

20

**COPY**

<400> 2

cgagcacggc gcagaggagc

20

<210> 3

<211> 20

<212> DNA

<213> Human

<400> 3

ggacgagggc gagcacggcg

20

<210> 4

<211> 20

<212> DNA

<213> Human

<400> 4

tgggtccgga gcctgaatca

20

<210> 5

<211> 20

<212> DNA

<213> Human

<400> 5

tttttcaggg aatccggggg

20

<210> 6

<211> 20

<212> DNA

<213> Human

<400> 6

gggtagttca ggcgggagcg

20

<210> 7

<211> 20

<212> DNA

<213> Human

<400> 7

aatggcgccc tgtgtcccga

20

<210> 8

<211> 20

<212> DNA

<213> Human

<400> 8

gtgcccagcc agagcgactg

20

<210> 9

<211> 20

<212> DNA

<213> Human

<400> 9

tgaggtgcgg gtggaagtgc

20

<210> 10

<211> 20

<212> DNA

<213> Human

<400> 10

gtgccgacgt gggacccaga

20

<210> 11

<211> 20

<212> DNA

<213> Human

<400> 11

gacccccagg gcactcatgg

20

<210> 12

<211> 20

<212> DNA

<213> Human

<400> 12

cgacccccaca gacagcccc

20

<210> 13

<211> 20

<212> DNA

<213> Human

<400> 13

tctctgtect ccaaatcgaa

20

<210> 14

<211> 20

<212> DNA

<213> Human

<400> 14

tgcttcccac cctgaatgat

20

<210> 15

<211> 20

<212> DNA

<213> Human

<400> 15

tggaataga tgaagttgcc

20

<210> 16

<211> 20

<212> DNA

<213> Human

<400> 16

tcctctggct tctggtagcg

20

<210> 17

<211> 20

<212> DNA

<213> Human

<400> 17

aggtttcctt ttccgatttc

20

<210> 18

<211> 20

<212> DNA

<213> Human

<400> 18

gtgctccctg tttcatcaat

20



**COPY**

<210> 19

<211> 20

<212> DNA

<213> Human

<400> 19

cattgcctgg cttcctggag

20

<210> 20

<211> 20

<212> DNA

<213> Human

<400> 20

cccagggcac tcatggctat

20

<210> 21

<211> 20

<212> DNA

<213> Human

<400> 21

gctgagaaac cttcttttgc

20

<210> 22

<211> 20

<212> DNA

<213> Human

<400> 22

aacatctgtg gggttggtgt

20

<210> 23

**COPY**

<211> 20

<212> DNA

<213> Human

<400> 23

tcggacaaat cgagttatca

20

<210> 24

<211> 20

<212> DNA

<213> Human

<400> 24

caacattcca gagcaaggat

20

<210> 25

<211> 20

<212> DNA

<213> Human

<400> 25

cgatcttgaa cttcctcatg

20

<210> 26

<211> 20

<212> DNA

<213> Human

<400> 26

cctgtgagct ggaagtcac

20

<210> 27

<211> 20

<212> DNA

<213> Human

<400> 27

catgtgatac cagaaggtca

20

<210> 28

<211> 20

<212> DNA

<213> Human

<400> 28

ccaacaggca cagtacagca

20

<210> 29

<211> 20

<212> DNA

<213> Human

<400> 29

accatccaca agttcaaagt

20

<210> 30

<211> 20

<212> DNA

<213> Human

<400> 30

accacagggc tcaccaggcg

20

<210> 31

<211> 20

<212> DNA

<213> Human

<400> 31

cgctccccgcc tgaactaccc

20

<210> 32

<211> 20

<212> DNA

<213> Human

<400> 32

tcccaccctg aatgatgatg

20

<210> 33

<211> 2772

<212> DNA

<213> Human

<400> 33

atggagaggg ggctgccgct cctctgcgcc gtgctcgccc tcgtctctgc cccggccggc 60  
gcttttcgca acgatgaatg tggcgatact ataaaaattg aaagccccgg gtaccttaca 120  
tctcttggtt atcctcattc ttatcaccca agtgaaaaat gcgaatggct gattcaggct 180  
ccggacccat accagagaat tatgatcaac ttcaaccctc acttcgattt ggaggacaga 240  
gactgcaagt atgactacgt ggaagtcttc gatggagaaa atgaaaatgg acatttttagg 300  
ggaaagttct gtggaaagat agccccctct cctgttgtgt cttcagggcc atttcttttt 360  
atcaaatttg tctctgacta cgaaacacat ggtgcaggat ttccatacg ttatgaaatt 420  
ttcaagagag gtcttgaatg ttcccagaac tacacaacac ctagtggagt gataaagtcc 480  
cccggattcc ctgaaaaata tcccacagc cttgaatgca cttatattgt ctttgcgcca 540  
aagatgtcag agattatcct ggaatttgaa agctttgacc tggagcctga ctcaaatect 600  
ccagggggga tgttctgtcg ctacgaccgg ctagaaatct gggatggatt ccctgatgtt 660  
ggccctcaca ttgggcgtta ctgtggacag aaaacaccag gtcgaatccg atcctcatcg 720  
ggcattctct ccatggtttt ttacaccgac agcgcgatag caaaagaagg tttctcagca 780  
aactacagtg tcttgcagag cagtgtctca gaagatttca aatgtatgga agctctgggc 840

atggaatcag gagaaattca ttctgaccag atcacagctt cttcccagta tagcaccaac 900  
 tgggtctgcag agcgctcccg cctgaactac cctgagaatg ggtggactcc cggagaggat 960  
 tcctaccgag agtggataca ggtagacttg ggccttctgc gctttgtcac ggctgtcggg 1020  
 acacagggcg ccatttcaaa agaaaccaag aagaaatatt atgtcaagac ttacaagatc 1080  
 gacgttagct ccaacgggga agactggatc accataaaag aaggaaacaa acctgttctc 1140  
 ttccaggga acaccaacce cacagatgtt gtgggtgcag tattccccaa accactgata 1200  
 actcgatttg tccgaatcaa gcctgcaact tgggaaactg gcatacttat gagatttgaa 1260  
 gtatacgggt gcaagataac agattatcct tgctctggaa tgttgggtat ggtgtctgga 1320  
 cttatttctg actccagat cacatcatcc aaccaaggag acagaaactg gatgcctgaa 1380  
 aacatccgcc tggtaaccag tcgctctggc tgggcacttc caccgcacc tcattcctac 1440  
 atcaatgagt ggctccaaat agacctgggg gaggagaaga tcgtgagggg catcatcatt 1500  
 caggggtggga agcaccgaga gaacaagggtg ttcatgagga agttcaagat cgggtacagc 1560  
 aacaacggct cggactggaa gatgatcatg gatgacagca aacgcaaggc gaagtctttt 1620  
 gagggcaaca acaactatga tacacctgag ctgcggactt ttccagctct ctccacgcga 1680  
 ttcatcagga tctaccccga gagagccact catggcggac tggggctcag aatggagctg 1740  
 ctgggctgtg aagtgggaagc ccctacagct ggaccgacca ctccaacgg gaacttggtg 1800  
 gatgaatgtg atgacgacca ggccaactgc cacagtggaa caggtgatga cttccagctc 1860  
 acaggtggca cactgtgct ggccacagaa aagcccacgg tcatagacag caccatacaa 1920  
 tcagagtttc caacatatgg ttttaactgt gaatttggtt ggggctctca caagaccttc 1980  
 tgccactggg aacatgacaa tcacgtgcag ctcaagtgga gtgtgttgac cagcaagacg 2040  
 ggaccatttc aggatcacac aggagatggc aacttcatct attccaagc tgacgaaaat 2100  
 cagaagggca aagtggctcg cctggtgagc cctgtggttt attcccagaa ctctgccac 2160  
 tgcatgacct tctggtatca catgtctggg tcccacgtcg gcacactcag ggtcaaactg 2220  
 cgctaccaga agccagagga gtacgatcag ctggtctgga tggccattgg acaccaaggt 2280  
 gaccactgga aggaagggcg tgtcttctc cacaagtctc tgaaacttta tcaggtgatt 2340  
 ttcgagggcg aaatcgaaa aggaaacctt ggtgggattg ctgtggatga cattagtatt 2400  
 aataaccaca ttccacaaga agattgtgca aaaccagcag acctggataa aaagaacca 2460  
 gaaattaaaa ttgatgaaac agggagcacg ccaggatacg aaggtgaagg agaaggtgac 2520  
 aagaacatct ccaggaagcc aggcaatgtg ttgaagacct tagaaccat cctcatcacc 2580  
 atcatagcca tgagcgccct gggggtcctc ctgggggctg tctgtggggt cgtgctgtac 2640  
 tgtgcctgtt ggcataatgg gatgtcagaa agaaacttgt ctgccctgga gaactataac 2700  
 tttgaacttg tggatggtgt gaagttgaaa aaagacaaac tgaatacaca gactacttat 2760  
 tcggaggcat ga 2772

&lt;210&gt; 34

&lt;211&gt; 2766

&lt;212&gt; DNA

&lt;213&gt; Rat neuropilin

&lt;400&gt; 34

```

atggagaggg ggctgccgtt gctgtgcgcc acgctcgccc ttgccctcgc cctggggggct 60
ttccgcagcg ataaatgtgg cgggactata aaaattgaaa acccggggta ccttacatct 120
cccggctacc ctcatcttta ccatccaagt gagaaatgtg aatggctaata ccaagctccg 180
gagccctacc agagaatcat gatcaacttc aaccacatt tcgatttgga ggacagagac 240
tgcaagtatg actatgtgga agtgatcgat ggagagaatg aaggtggccg cctgtggggg 300
aagttctgtg ggaagatcgc accttcacct gtggtgtctt cagggccatt tctcttcac 360
aaatttgtct ctgactatga gaccacggg gcaggatttt ccatccgcta tgaaatcttc 420
aagagagggc ccgaatgttc tcagaactat acagcaccta ctggagtgat aaagtccctt 480
gggttccctg aaaaataccc caacagcttg gagtgcacct acatcatctt tgcaccaaag 540
atgtctgaga taatcctaga gtttgaaagt tttgacctgg agcaagactc aaatcctccc 600
ggaggaatgt tctgtcgcga tgaccggctg gagatctggg atggattccc tgaagttggc 660
cctcacattg ggcgttactg tgggcagaaa actcctggcc ggatccgctc ctcttcaggc 720
attctatcca tgggtcttcta cactgacagc gcaatagcaa aggaagggtt ctcagccaac 780
tacagcgtgc tgcagagcag catctctgaa gatttcaagt gtatggaggc tctgggcatg 840
gaatctggag agatccattc tgaccagatc actgcatctt cccagtatgg taccaactgg 900
tctgttgagc gctcccgctt gaactaccct gaaaacgggt ggacaccagg agaggactcc 960
tacagggagt ggatccaggt ggacttgggc ctctgcgat tcgttactgc tgtggggaca 1020
cagggtgcca tttccaagga aaccaagaag aatattatg tcaagactta cagagtagac 1080
atcagctcca acggagagga ctggatcacc ctgaaggagg gaaataaagc cattatcttt 1140
cagggaaaca ccaatcccac ggatgttgtc tttggagttt tccccaaacc actgataact 1200
cgatttgtcc gaatcaaacc tgcacctgga gaaactggaa tatctatgag atttgaagtt 1260
tatggctgca agataacaga ttacccttgc tctggaatgt tgggcatggg gtctggactt 1320
atttcagact cccagattac agcatccaac caaggagaca ggaactggat gccagaaaac 1380
atccgcctgg tgaccagtcg aaccggctgg gccctgccac cctcacccca ccatacatc 1440
aatgaatggc tccaagtgga cctgggagat gagaagatag taagaggtgt catcattcaa 1500
gggtgggaagc accgagaaaa caaagtgttc atgaggaagt tcaagatcgc ctacagtaac 1560

```

aatggttctg actggaaaat gatcatggat gacagcaagc gcaaggctaa gtcttttgaa 1620  
ggcaacaaca actatgacac acctgagctc cgggccttta cacctctctc cacaagattc 1680  
atcaggatct accccgagag agccacacat agtgggctcg gactgaggat ggagctactg 1740  
ggctgtgaag tagaagtgcc tacagctgga cccacgacac ccaatgggaa ccccgaggac 1800  
cagtgtgacg atgaccaggc caactgccac agtggcacag gtgatgactt ccagctcaca 1860  
ggaggcacca ctgtcctggc cacagagaag cccaccatta tagacagcac catccaatca 1920  
gagttcccga catacggttt taactgagag tttggctggg gctctcaca gacattctgc 1980  
cactgggaac atgacagcca cgcgcagctc aggtggaggg tgctgaccag caagacgggg 2040  
cccattcagg accacacagg agatggcaac ttcattctatt cccaagctga tgaaaatcag 2100  
aaaggcaaag tagcccgctt ggtgagcctt gtggtctatt cccagagttc tgcccactgc 2160  
atgaccttct ggtatcacat gtccggctct catgtgggta cactgagggt caaactgcac 2220  
taccagaagc cagaggaata tgatcaactg gtctggatgg tggtcgggca ccaaggagac 2280  
cactggaagg aagggcggtg cttgctgcac aaatctctga aactgtatca ggttattttt 2340  
gaaggtgaaa tcggaaaagg aaacctcggg gggattgctg tggatgatat cagtattaac 2400  
aaccacattc ctcaggagga ctgtgcaaaa ccaacagacc tagataaaaa gaacacagaa 2460  
attaaaatag atgaaacagg gagcacccca ggatatgaag aagggaagg cgacaagaac 2520  
atctccagga agccaggcaa tgtgcttaag accctggacc ccattctgat caccatcata 2580  
gccatgagtg ccctgggggt gctcctgggt gcagtctgtg gagttgtgct gtactgtgcc 2640  
tggtggcaca atgggatgtc ggaaaggaac ctatctgccc tggagaacta taactttgaa 2700  
cttgtggatg gtgtaaagt gaaaaaagat aaactgaacc cacacagtaa ttactcagag 2760  
gcgtga 2766

<210> 35

<211> 3652

<212> DNA

<213> Mouse

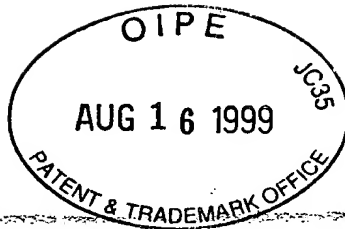
<400> 35

tttttttttt tttttttttt tttttttttt tttttctctc ttcttcttct tcttgagaca 60  
tgccccgggc agtggctcct ggaagaggaa caagtgtggg aaaagggaga ggaaatcgga 120  
gctaaatgac aggatgcagg cgacttgaga cacaaaaaga gaagcgcttc tcgcgaattc 180  
aggcattgcc tcgccgctag ccttccccgc caagaccgcg tgaggatttt atggttctta 240  
ggcggactta agagcgtttc ggattgttaa gattatcggt tgctgggttt tcgtccgcgc 300

aatcgtgttc tcttgcggct gcctggggac tggcttggcg aaggaggatg gagagggggc 360  
tgccgttgct gtgcgccacg ctgcgccctt ccctcgccct ggcgggcgct ttccgcagcg 420  
acaaatgtgg cgggaccata aaaatcgaaa acccagggtta cctcacatct cccggttacc 480  
ctcattctta ccatccaagt gagaagtgtg aatggctaata ccaagctccg gaaccctacc 540  
agagaatcat aatcaacttc aaccacatt tcgatttga ggacagagac tgcaagtatg 600  
actacgtgga agtaattgat ggggagaatg aaggcgccg cctgtggggg aagttctgtg 660  
ggaagattgc accttctcct gtggtgtctt cagggccctt tctcttcac aaatttgtct 720  
ctgactatga gacacatggg gcagggtttt ccatccgcta tgaaatcttc aagagagggc 780  
ccgaatgttc tcagaactat acagcaccta ctggagtgat aaagtccctt gggttccctg 840  
aaaaatcccc caactgcttg gagtgcacct acatcatctt tgcaccaaag atgtctgaga 900  
taatcctgga gtttgaaagt tttgacctgg agcaagactc gaatcctccc ggaggaatgt 960  
tctgtcgcta tgaccggctg gagatctggg atggattccc tgaagttggc cctcacattg 1020  
ggcgttattg tgggcagaaa actcctggcc ggatccgctc ctcttcaggc gttctatcca 1080  
tggtctttta cactgacagc gcaatagcaa aagaaggttt ctcagccaac tacagtgtgc 1140  
tacagagcag catctctgaa gatttttaagt gtatggaggc tctgggcatg gaatctggag 1200  
agatccattc tgatcagatc actgcatctt cacagtatgg taccaactgg tctgtagagc 1260  
gctcccgctt gaactaccct gaaaatgggt ggactccagg agaagactcc tacaaggagt 1320  
ggatccaggt ggacttgggc ctctgcgat tcgttactgc tgtagggaca cagggtgcca 1380  
tttccaagga aaccaagaag aaatattatg tcaagactta cagagtagac atcagctcca 1440  
acggagagga ctggatctcc ctgaaagagg gaaataaagc cattatcttt cagggaaaca 1500  
ccaacccac agatgttgct ttaggagttt tctccaaacc actgataact cgatttgtcc 1560  
gaatcaaacc tgtatcctgg gaaactggta tatctatgag atttgaagtt tatggctgca 1620  
agataacaga ttatccttgc tctggaatgt tgggcatggt gtctggactt atttcagact 1680  
cccagattac agcatccaat caagccgaca ggaattggat gccagaaaac atccgtctgg 1740  
tgaccagtcg taccggctgg gcactgccac cctcacccca ccatacacc aatgaatggc 1800  
tccaagtgga cctgggagat gagaagatag taagagggtg catcattcag ggtgggaagc 1860  
accgagaaaa caagggtgtc atgaggaagt tcaagatcgc ctatagtaac aatggctctg 1920  
actggaaaac tatcatggat gacagcaagc gcaaggctaa gtcgttcgaa ggcaacaaca 1980  
actatgacac acctgagctt cggacgtttt cacctctctc cacaaggttc atcaggatct 2040  
accctgagag agccacacac agtgggcttg ggctgaggat ggagctactg ggctgtgaag 2100  
tggaagcacc tacagctgga ccaaccacac ccaatgggaa ccagtgcat gagtgtgacg 2160  
acgaccaggc caactgccac agtggcacag gtgatgactt ccagctcaca ggaggcacca 2220  
ctgtcctggc cacagagaag ccaaccatta tagacagcac catccaatca gagttcccca 2280



catacggttt taactgcgag tttggctggg gctctcacia gacattctgc cactgggagc 2340  
 atgacagcca tgcacagctc aggtggagtg tgctgaccag caagacaggg ccgattcagg 2400  
 accatacagg agatggcaac ttcattctatt cccaagctga tgaaaatcag aaaggcaaa 2460  
 tagcccgctt ggtgagccct gtggtctatt cccagagctc tgcccactgt atgaccttct 2520  
 ggtatcacat gtccggctct catgtgggta cactgagggt caaactacgc taccagaagc 2580  
 cagaggaata tgatcaactg gtctggatgg tggttgggca ccaaggagac cactggaaa 2640  
 aaggacgtgt cttgctgcac aaatctctga aactatatca gggtattttt gaagggtgaaa 2700  
 tcggaaaagg aaaccttggt ggaattgctg tggatgatat cagtattaac aaccatattt 2760  
 ctcaggaaga ctgtgcaaaa ccaacagacc tagataaaaa gaacacagaa attaaaattg 2820  
 atgaaacagg gagcactcca ggatatgaag gagaagggga aggtgacaag aacatctcca 2880  
 ggaagccagg caatgtgctt aagaccctgg atcccatcct gatcaccatc atagccatga 2940  
 gtgccctggg agtactcctg ggtgcagtct gtggagtgtg gctgtactgt gcctgttggc 3000  
 acaatgggat gtcagaaagg aacctatctg ccctggagaa ctataacttt gaacttgtgg 3060  
 atggtgtaaa gttgaaaaaa gataaactga acccacagag taattactca gaggcgtgaa 3120  
 ggcacggagc tggaggggaa aaggaggag cacggcagga gaacaggtgg aggcattggg 3180  
 actctgttac tctgctttca ctgtaagctg ggaagggcgg ggactctgtt actccgcttt 3240  
 cactgtaagc tcggaagggc atccacgatg ccatgccagg cttttctcag gagcttcaat 3300  
 gagcgtcacc tacagacaca agcaggtgac tgcggtaaca acaggaatca tgtacaagcc 3360  
 tgctttcttc tcttggtttc atttgggtaa tcagaagcca tttgagacca agtgtgactg 3420  
 atttcattgt tcactctact agcccccttt ttctctctt ttctccttac cctgtggtgg 3480  
 attcttctcg gaaactgcaa aatccaagat gctggcacta ggcgttattc agtgggacct 3540  
 tttgatggac atgtgacctg tagcccagtg cccagagcat attatcataa ccacatttca 3600  
 ggggacgcca acgtccatcc acctttgcat cgctacctgc agcgagcaca gg 3652



**COPY**

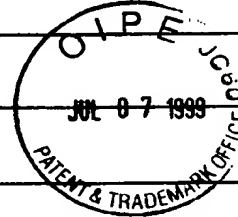
Transmittal Letter (+2), Copy of Notice to File Missing Parts of Application; Copy of Notice to Comply with Requirements for Patent Application Containing Nucleotide Sequence and/or Amino Acid Sequence Disclosures; Small Entity Statement; Combined Declaration and Power of Attorney; a paper copy and a computer readable copy of the Sequence Listing; a Reply to the Notice to Comply; a Check for \$562.00 ✓

PAPER: \_\_\_\_\_

INVENTOR: \_\_\_\_\_ WRIGHT et al. \_\_\_\_\_

SERIAL No: \_\_\_\_\_ 09/296,264 \_\_\_\_\_

FILING DATE: \_\_\_\_\_ April 22, 1999 \_\_\_\_\_



LAM/jh  
032396-043

RECEIVED BY THE UNITED STATES PATENT OFFICE

12817

July 7, 1999

**RECEIVED**

**AUG 17 1999**

**TECH CENTER 1600/2900**